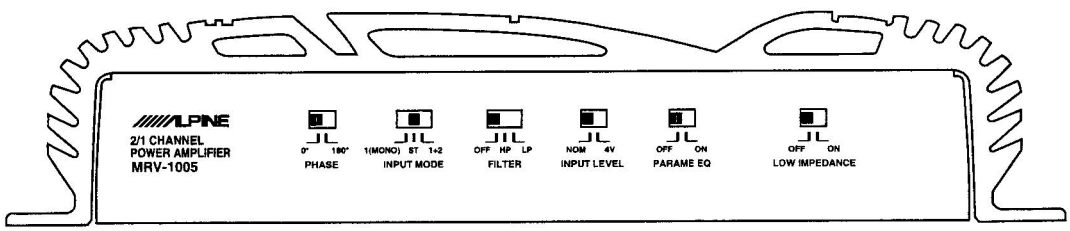
ALPINE®

SERVICE MANUAL

2 Channel Power Amplifier



サービス費用区分	B
技術資料No.	PM-69-O

MRV-1005

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Specifications

Power Output	4ohm-2channel, 0.2% (20Hz~20kHz) T.H.D., 14.4V : 150W
	4ohm-2channel, 0.2% (20Hz~20kHz) T.H.D., 12V : 110W
	2ohm-2channel, 0.8% (20Hz~20kHz) T.H.D., 14.4V : 230W
	2ohm-2channel, 0.8% (20Hz~20kHz) T.H.D., 12V : 150W
	4ohm-1channel, 0.8% (20Hz~20kHz) T.H.D., 14.4V, BRIDGE MONO : 450W
	4ohm-1channel, 0.8% (20Hz~20kHz) T.H.D., 12V, BRIDGE MONO : 330W
S/N Ratio (Ref. Output 200W/ch/4ohm, Input shorted)	100dB
Input Sensitivity	200W Output, Gain-Volume (Normal) : 1V±3dB
	200W Output, Gain-Volume (MAX.) : 0.2V±3dB
	200W Output, Gain-Volume (MIN.) : 4V±3dB
Input Impedance (RCA Input)	20k ohm±10%
Frequency Response (0±1dB, Ref. 1kHz)	20Hz~40kHz
Current Drain	No Signal : 2.5A
	4ohm-2channel, 0.8% T.H.D. : 80A
	2ohm-2channel, 0.8% T.H.D. : 115A
	4ohm-1channel, BTL, 540W :120A
Residual Noise (Input Shorted, 4ohm×2)	VR Center : 3mV
	VR MIN. : 3mV
	VR MAX. : 7mV
Channel Separation (Input Shorted, Ref. 1kHz)	55dB
Remote on Voltage (1W Output)	6.5 +1, -0.5V
Remote Current Drain	1.3±0.5mA
Back Up Current Drain	1.2mA
Fuse Requirement	60A (For Battery Line)
Power Source	DC14.4V (11~16V)
Semiconductors	13IC's, 59Transistors, 26Diodes, 19Zener Diodes, 18FET's
Dimensions (W×H×D)	240×53×330mm
Weight	4.4kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

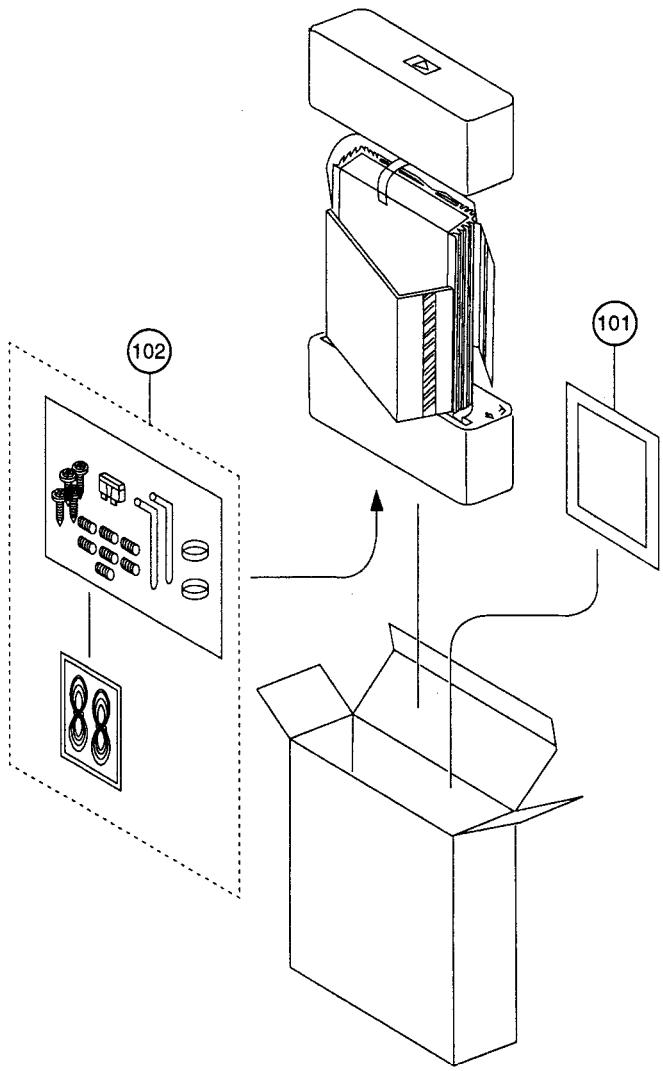
Packing Assembly Parts List

Symbol No.		Part No.	Description
○	101-1	68P90664W49	Owner's Manual
△	101-1	68P90664W90	Owner's Manual
□	101-1	68P90664W53	Owner's Manual
△	101-2	68P90664W50	Owner's Manual (I/G/S)
	102-1	03T75161W01	Screw, Pan (M5X7)
	102-2	03E11447S01	Screw, Tapping (M4X14)
	102-3	28E25541S01	Housing Rubber-E
	102-4	65E25559S01	Fuse, Auto 60A (For Battery Line)
△	102-5	01E22150S01	Assy., Battery Wire
□	102-5	01E22150S01	Assy., Battery Wire

Symbol No.		Part No.	Description
△	102-6	01E22151S01	Assy., GND Wire
□	102-6	01E22151S01	Assy., GND Wire
△	102-7	29E25574S01	Lug Terminal
□	102-7	29E25574S01	Lug Terminal
△	102-8	01E20928S01	Assy., Remote Wire
□	102-8	01E20928S01	Assy., Remote Wire
□	102-9	01E22152S01	Assy., Speaker Wire (+)
□	102-10	01E22153S01	Assy., Speaker Wire (-)

NOTE: ○: For North American Model Only, △: For General Foreign Model Only,
□: For Japanese Model Only, Others : Common.

Packing Method View



Adjustment Procedures

1. Power Supply Voltage Adjustment

2次電源電圧調整

(1) Connection

接続

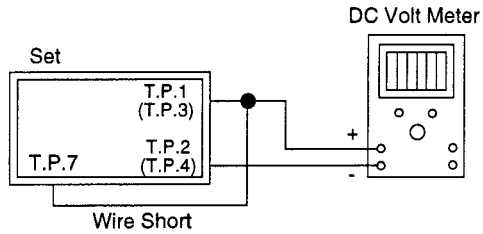


Figure 1
1図

BATTERY, REMOTE : DC14.4V
No Signal Input

(2) Adjustment Procedures

調整方法

① First, rote VR701, 703 fully counter clockwise.

調整を始める前に VR701, 703を反時計方向一杯に回転させる。

② Adjust VR703 so that Voltage between T.P.1 and T.P.2 reaches 45±0.5V.

T.P.1とT.P.2との間の電圧が45±0.5Vになる様にVR703で調整する。

③ Adjust VR701 so that Voltage between T.P.3 and T.P.4 reaches 45±0.5V.

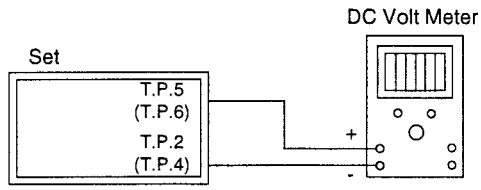
T.P.3とT.P.4との間の電圧が45±0.5Vになる様にVR701で調整する。

2. Idling Adjustment

アイドリング電流調整

(1) Connection

接続



BATTERY, REMOTE : DC14.4V
No Signal Input

Figure 2
2図

(2) Adjustment Procedures

調整方法

① First, rotate VR501, 502 fully counter clockwise.

調整を始める前に VR501、502を反時計方向一杯に回転させる。

② Adjust VR501 so that Voltage between T.P.2 and T.P.5 reaches 3±1mV.

T.P.2とT.P.5との間の電圧が3±1mVになる様にVR501で調整する。

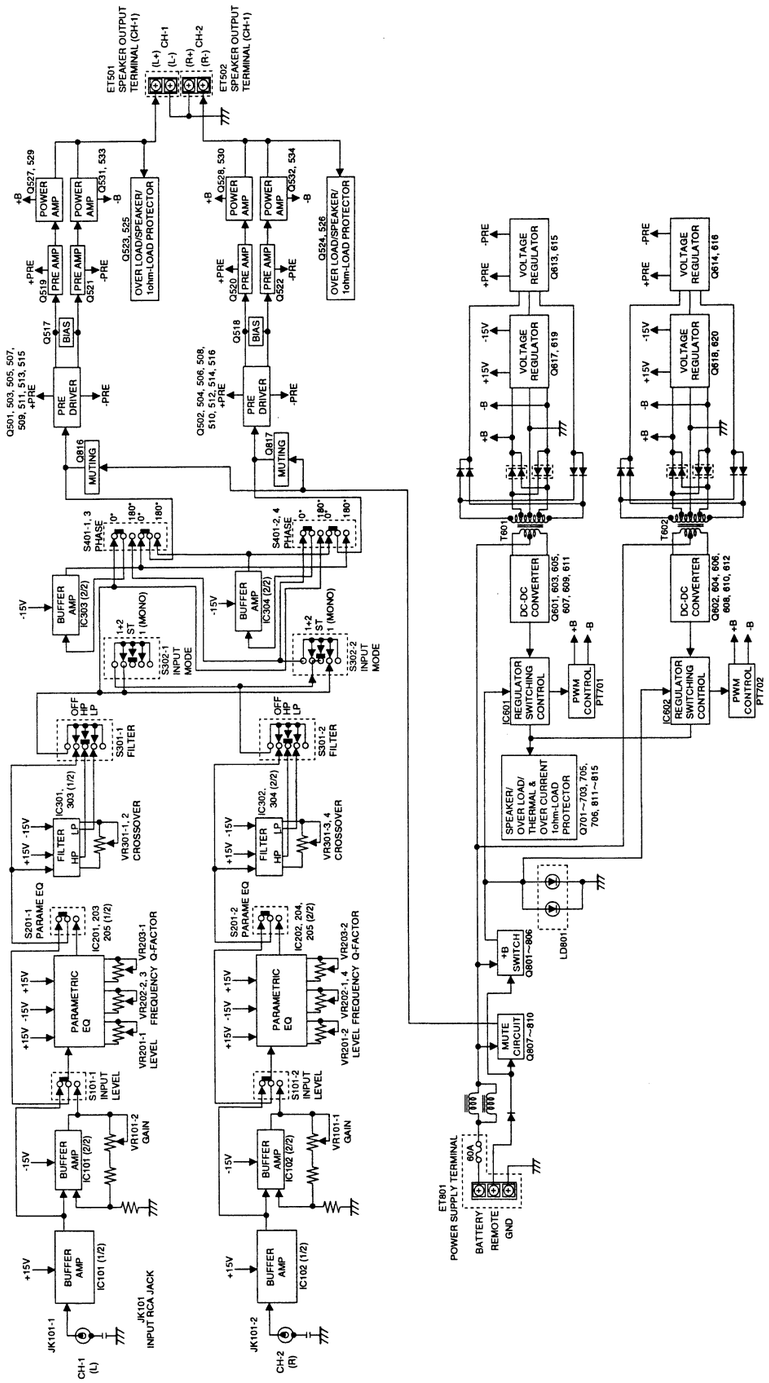
③ Adjust VR502 so that Voltage between T.P.4 and T.P.6 reaches 3±1mV.

T.P.4とT.P.6との間の電圧が3±1mVになる様にVR502で調整する。

NOTE : For the Adjustment Parts (VR501, 502, 701, 703) and Test Points (T.P.1~7), refer to the Parts Layout on P.C. Boards and Wiring Diagram.

注記 : 調整部品（VR501, 502, 701, 703）及びテストポイント（T.P.1~7）の詳細については、「Parts Layout on P.C. Boards and Wiring Diagram」を参照願います。

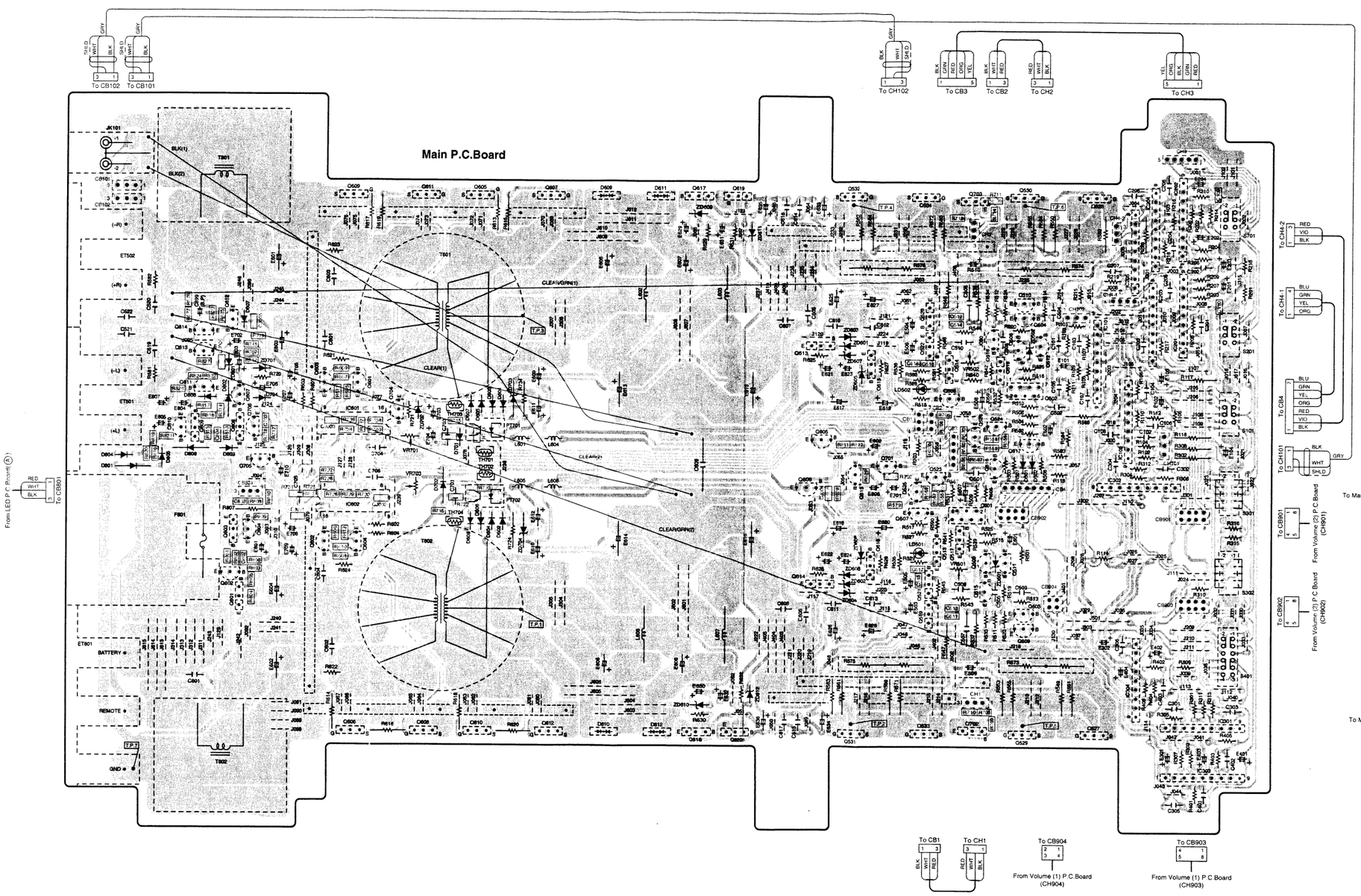
Block Diagram



MEMO

Parts Layout on P.C. Boards and Wiring Diagram

All P.C. Boards viewed from soldered side.



To Main P.C.Board (CB801)

LED P.C.Board

Volume (1) P.C.Board

To CH904
To Main P.C.Board (CB904)

To CH903
To Main P.C.Board (CB903)

Volume (2) P.C.Board

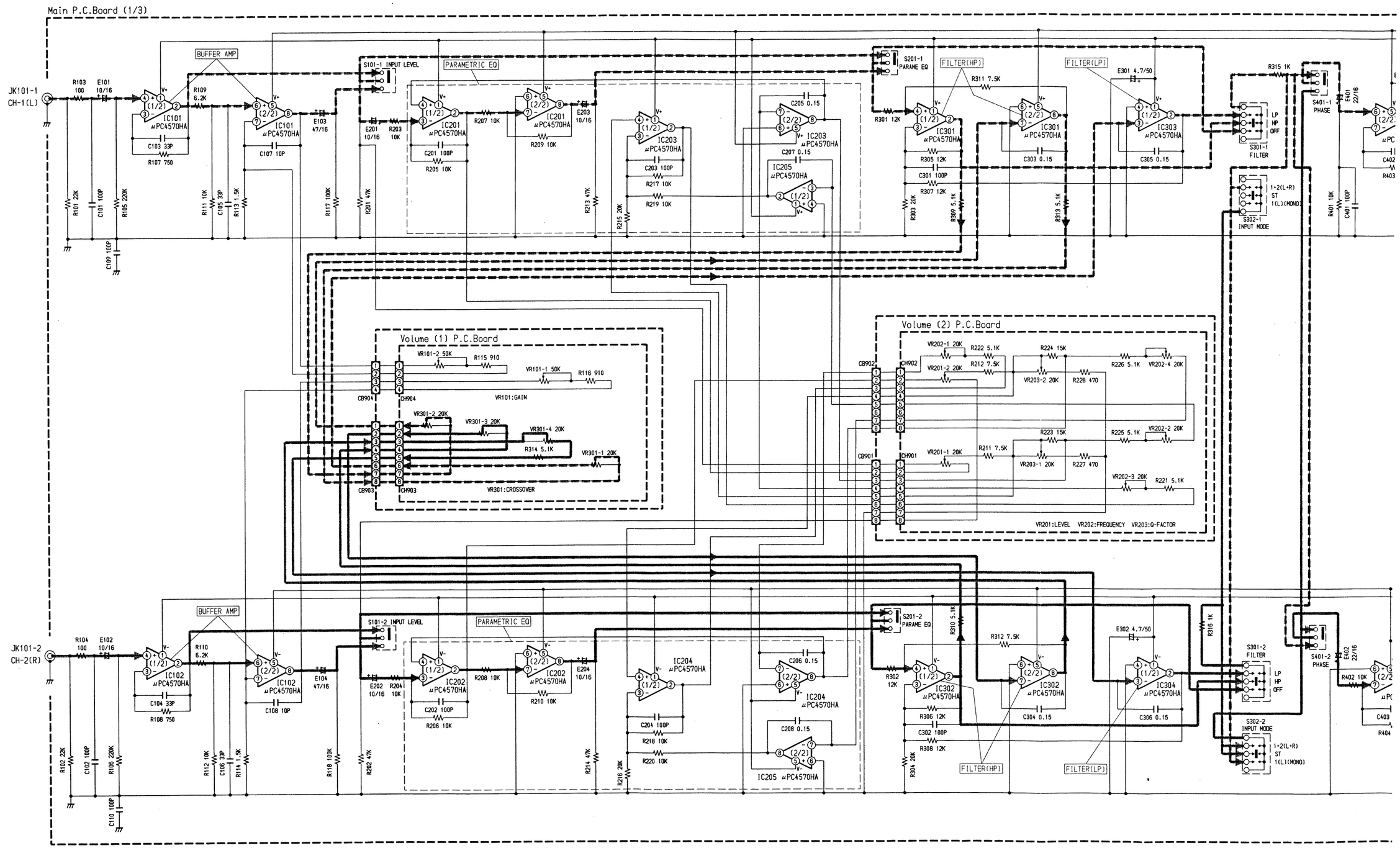
To CH901
To Main P.C.Board (CB901)

To CH902
To Main P.C.Board (CB902)

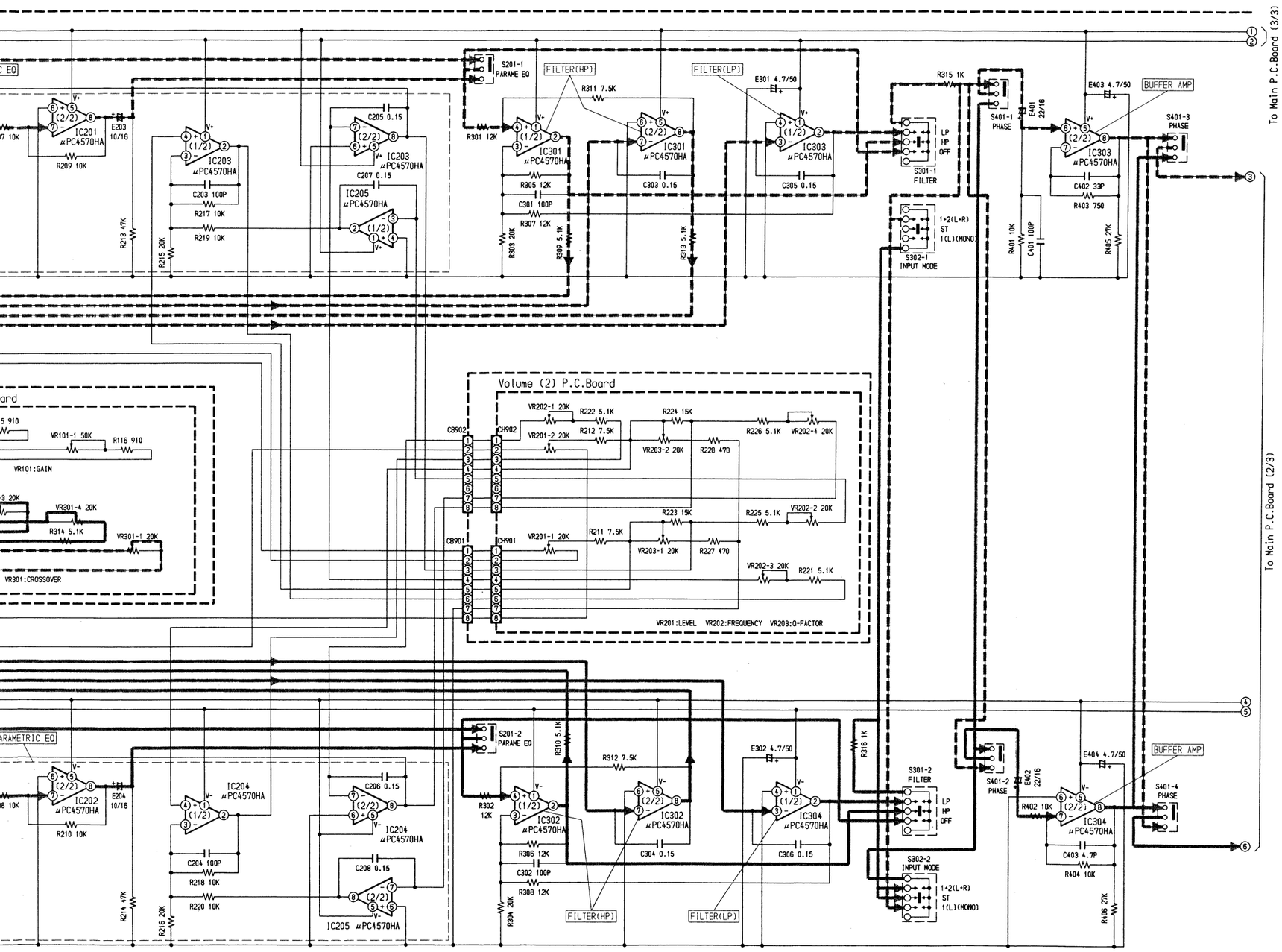
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/3)

IC	IC101(1/2) IC102(1/2)	IC101(2/2) IC102(2/2)	IC201(1/2) IC202(1/2)	IC201(2/2) IC202(2/2)	IC203(1/2) IC204(1/2)	IC205(1/2) IC205(2/2)	IC203(2/2) IC204(2/2)	IC301(1/2) IC302(1/2)	IC301(2/2) IC302(2/2)	IC303(1/2) IC304(1/2)	IC303(2) IC304(2)



IC201(2/2) IC202(2/2)	IC203(1/2) IC204(1/2)	IC205(1/2) IC205(2/2)	IC203(2/2) IC204(2/2)	IC301(1/2) IC302(1/2)	IC301(2/2) IC302(2/2)	IC303(1/2) IC304(1/2)	IC303(2/2) IC304(2/2)



IC101

1	15.36V
2	9.5mV
3	9.5mV
4	9mV
5	-15.46V
6	5.86mV
7	5.6mV
8	42.3mV
9	NC

IC102

1	15.58V
2	9.8mV
3	9.9mV
4	9.4mV
5	-15.4V
6	6.1mV
7	6.6mV
8	49mV
9	NC

IC201

1	15.39V
2	-0.7mV
3	-0.2mV
4	-0.7mV
5	-15.5V
6	-0.3mV
7	5.2mV
8	3.6mV
9	NC

IC202

1	15.6V
2	-1.32mV
3	-0.8mV
4	0.3mV
5	-15.4V
6	-0.34mV
7	-0.2mV
8	0.64mV
9	NC

IC203

1	15.6V
2	1.6mV
3	-0.36mV
4	-0.3mV
5	-15.5V
6	-0.34mV
7	2.1mV
8	-0.7mV
9	NC

IC204

1	15.6V
2	-0.67mV
3	0.5mV
4	-0.24mV
5	-15.4V
6	-0.3mV
7	-0.17mV
8	0.3mV
9	NC

IC205

1	15.3V
2	-0.8mV
3	-2mV
4	-2.4mV
5	-15.1V
6	-2.4mV
7	-2.9mV
8	-2.5mV
9	NC

IC301

1	15.46V
2	-0.4mV
3	0.13mV
4	0.12mV
5	-15.56V
6	-0.35mV
7	0.13mV
8	0.03mV
9	NC

IC302

1	15.6V
2	-0.55mV
3	-0.12mV
4	-0.32mV
5	-15.45V
6	-0.33mV
7	-0.03mV
8	-0.6mV
9	NC

IC303

1	15.46V
2	0.47mV
3	0.45mV
4	-0.34mV
5	-15.56V
6	0.1mV
7	0.7mV
8	0.67mV
9	NC

IC304

1	15.64V
2	-0.16mV
3	-0.11mV
4	-0.35mV
5	-15.46V
6	-0.34mV
7	0.05mV
8	-0.46mV
9	NC

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Meter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

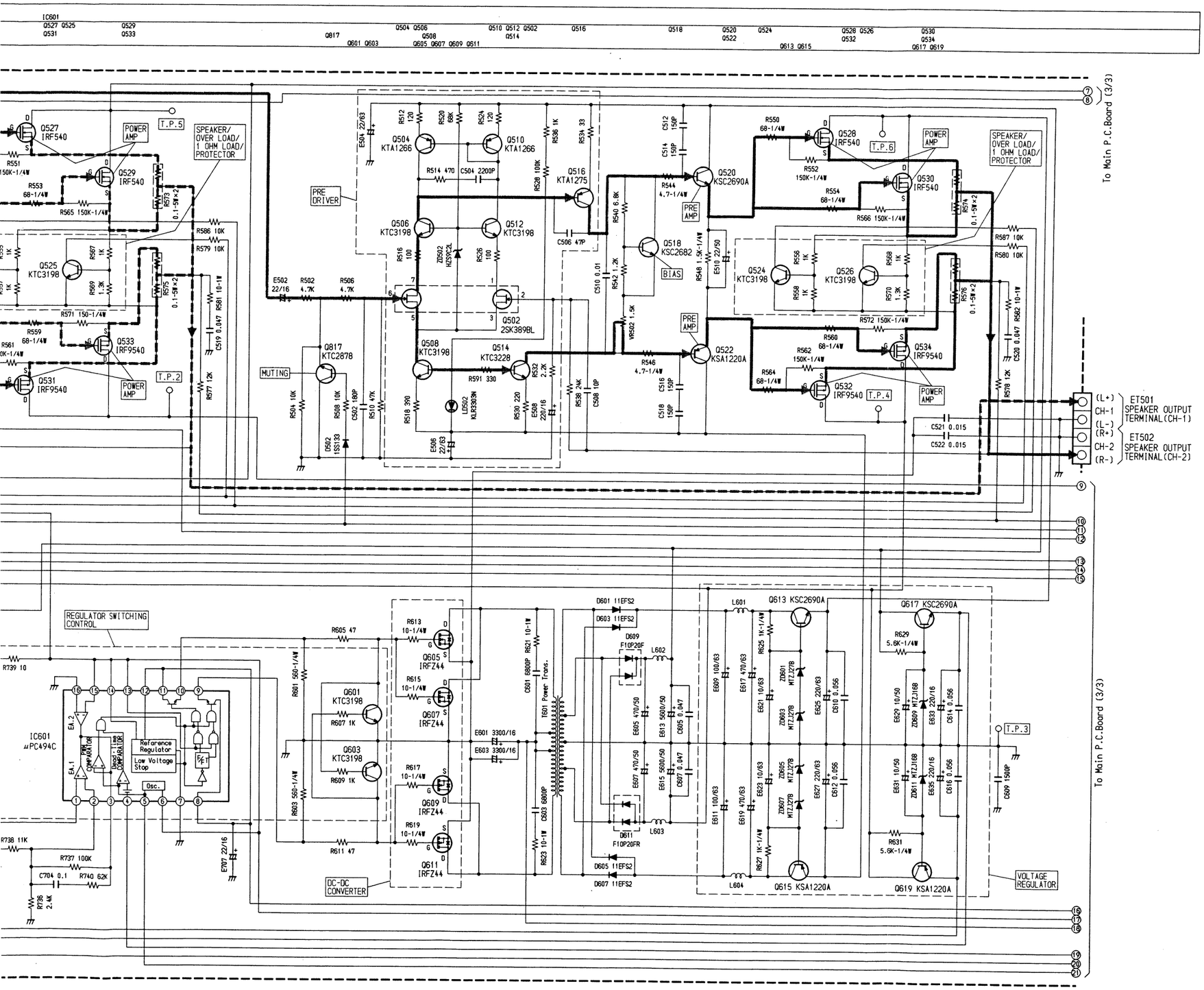
NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

MRV-1005 MRV-1005

Schematic Diagram (2/3)

| IC | | | | | | | | | IC601 | | | | | | | | |



IC601			
1	970mV	9	592mV
2	970mV	10	586mV
3	3.56V	11	14.3V
4	329mV	12	14.3V
5	1.5V	13	5V
6	5V	14	5V
7	3.7mV	15	5V
8	14.3V	16	4.48mV

Q501	
1	9.15V
2	-0.37mV
3	380mV
4	NC
5	380mV
6	-5mV
7	9.13V

Q502	
1	9V
2	-2.63mV
3	294mV
4	NC
5	294mV
6	-0.4mV
7	9V

	E	C	B		E	C	B
Q503	52.1V	51.5V	51.4V	Q520	2.96V	51.5V	3.48V
Q504	51.38V	50.84V	50.75V	Q521	-3.3V	-52.1V	-3.82V
Q505	9.28V	51.5V	9.84V	Q522	-3.1V	-52V	-3.58V
Q506	9.1V	50.83V	9.69V	Q523	-4.5mV	44.5V	-7.7mV
Q507	-51.7V	367mV	-51V	Q524	-2.3mV	45V	-2.2mV
Q508	-51.4V	395mV	-50.86V	Q525	-3.8mV	44.6V	-8.4mV
Q509	52.1V	51.45V	51.45V	Q526	-2.3mV	45V	-2.3mV
Q510	51.38V	50.75V	50.75V	Q601	4.5mV	6.7mV	235mV
Q511	9.26V	51.45V	9.84V	Q603	4.47V	622mV	233mV
Q512	9.1V	50.74V	9.69V	Q613	51.51V	54.28V	52.11V
Q513	-51.5V	-3.8V	-51V	Q615	-52V	54.34V	-52.58V
Q514	-51.3V	-3.56V	-50.86V	Q617	15.67V	45.7V	16.24V
Q515	52V	3.63V	51.5V	Q619	-15.48V	-45.8V	-16V
Q516	51.34V	3.5V	50.83V	Q815	44.7V	716mV	44.7V
Q517	-450mV	3.7V	220mV	Q816	-2.4mV	-2.3mV	—
Q518	-535mV	3.5V	59mV	Q817	-2.4mV	-2.3mV	—
Q519	3.16V	52.17V	3.69V				

	G	D	S		G	D	S
Q527	3V	45V	-56mV	Q533	-3.1V	-45V	-56mV
Q528	3V	45V	-56mV	Q534	-3.1V	-45V	-56mV
Q529	3V	45V	-56mV	Q605	645mV	14.4V	2.5mV
Q530	3V	45V	-56mV	Q607	645mV	14.4V	2.5mV
Q531	-3.1V	-45V	-56mV	Q609	645mV	14.4V	2.5mV
Q532	-3.1V	-45V	-56mV	Q611	645mV	14.4V	2.5mV

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Meter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

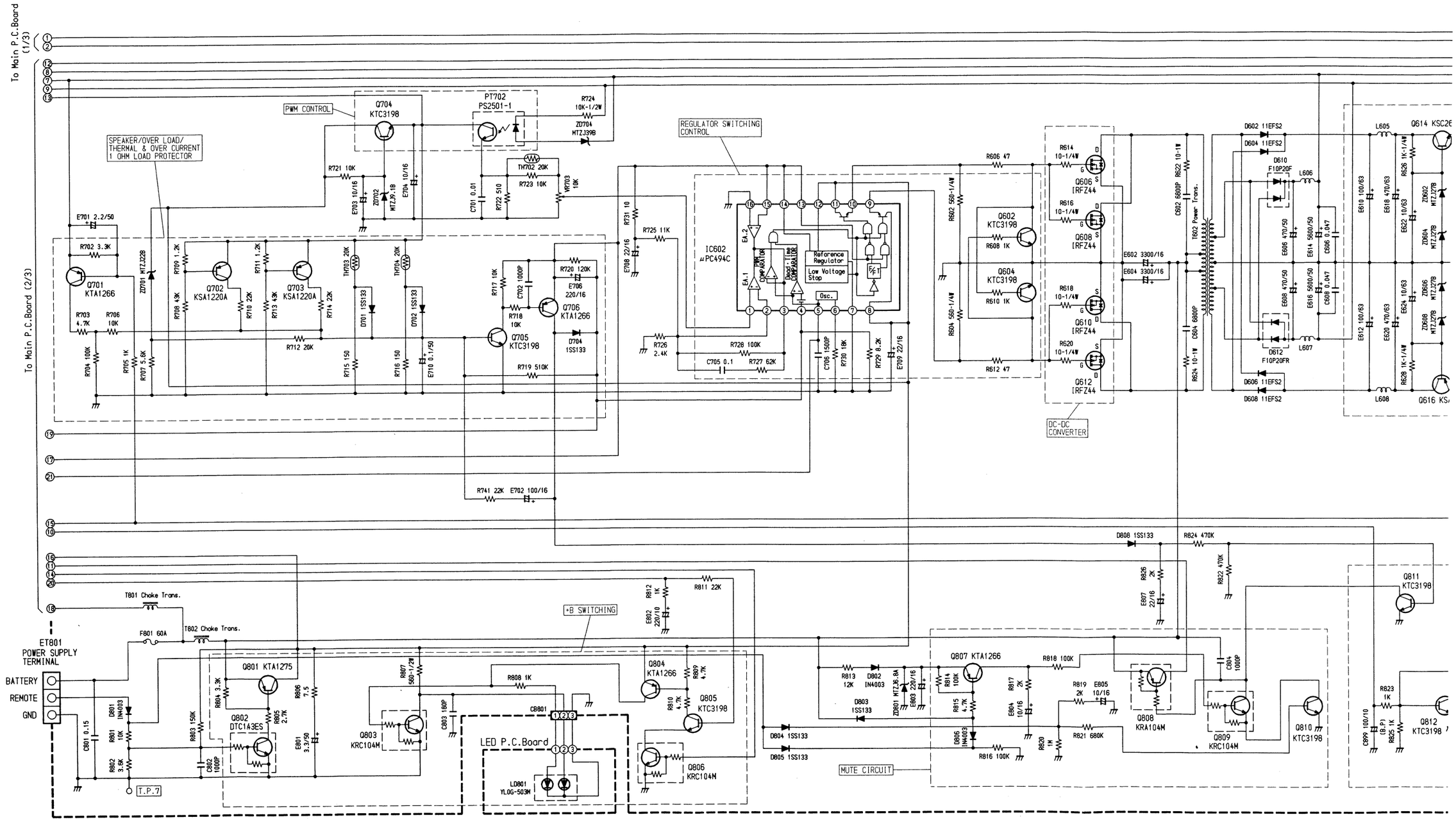
NOTE:

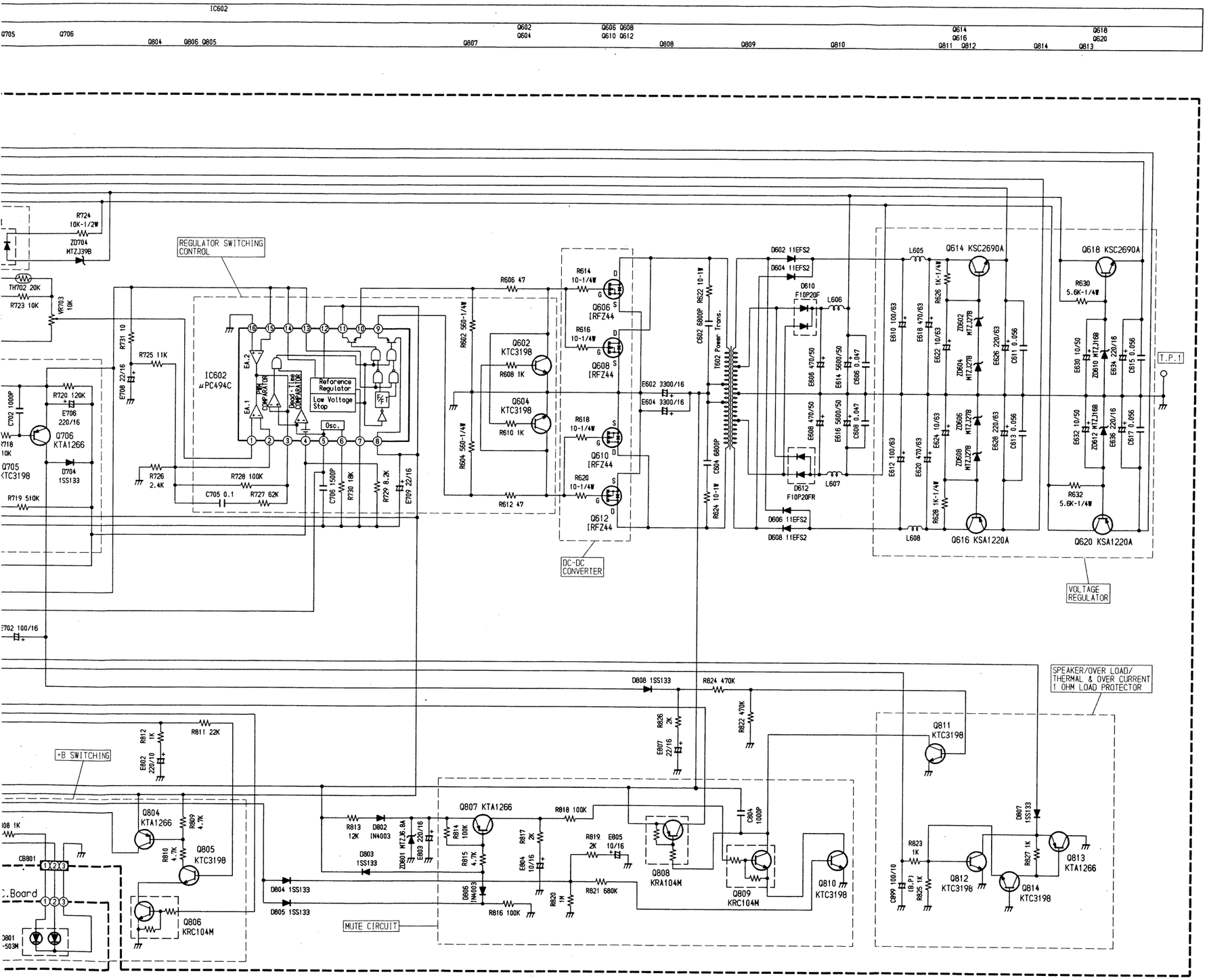
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

IC	IC602
Transistor (Q,PT)	Q701 Q702 Q802 Q801 Q703 Q704 Q803 PT702 Q705 Q706 Q804 Q806 Q805 Q807 Q602 Q604 Q606 Q608 Q610 Q612 Q808 Q809 Q810 Q614 Q616 Q811 Q812

Main P.C.Board (3/3)





IC602

1	973mV	9	672mV
2	972mV	10	660mV
3	3.57V	11	14.3V
4	330mV	12	14.3V
5	1.5V	13	5V
6	3.77V	14	5V
7	4mV	15	5V
8	14.3V	16	3.7mV

	E	C	B		E	C	B
Q602	3.7V	718mV	257mV	Q802	3mV	27.6mV	2.64V
Q604	3.9V	733mV	254mV	Q803	3.4mV	14.3V	-2.2mV
Q614	52.17V	54.77V	52.75V	Q804	14.3V	-1.3mV	14.3V
Q616	-52.11V	-54.68V	-52.67V	Q805	1.3V	14.3V	306mV
Q618	15.5V	45.3V	16.1V	Q806	4.1mV	1.3V	3.9mV
Q620	-15.46V	-45.8V	-16V	Q807	6.43V	11.6mV	6.37V
Q701	44.67V	470mV	44.4V	Q808	14.39V	14.34V	14.28V
Q702	8.1V	41.4mV	7.78V	Q809	9.4mV	14.28V	9mV
Q703	8.1V	35mV	7.78V	Q810	3.9mV	9.3mV	574mV
Q704	8.1V	14.3V	8.8V	Q811	4.1mV	14.28V	1mV
Q705	3.7mV	5V	507mV	Q812	4.1mV	43.8V	3.3mV
Q706	5V	-520mV	4.86V	Q813	44V	4.1mV	43.9V
Q801	14.39V	14.3V	13.7V	Q814	3.3mV	43.9V	4mV

	G	D	S
Q606	645mV	14.4V	2.5mV
Q608	645mV	14.4V	2.5mV
Q610	645mV	14.4V	2.5mV
Q612	645mV	14.4V	2.5mV

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Meter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF=microfarads,pF=picofarads

Abbreviations	
RES.= Resistor	CAP.= Capacitor
C.F.= Carbon Film	ELY.= Electrolytic
M.F.= Metal Film	CER.= Ceramic
M.O.= Metal Oxide Film	MYL.= Mylar
M.P.= Metal Plate	TAN.= Tantalum
TR. = Transistor	POLY.= Polystyrol
TRANS.= Transformer	PP. = Polypropylene
CP. = Chip	PLT.= Polyethylene
	PF. = Polyester Film

Symbol No.	Part No.	Description
Main P.C.Board		
IC's		
IC101	51E22137S01	μPC4570HA
IC102	51E22137S01	μPC4570HA
IC201	51E22137S01	μPC4570HA
IC202	51E22137S01	μPC4570HA
IC203	51E22137S01	μPC4570HA
IC204	51E22137S01	μPC4570HA
IC205	51E22137S01	μPC4570HA
IC301	51E22137S01	μPC4570HA
IC302	51E22137S01	μPC4570HA
IC303	51E22137S01	μPC4570HA
IC304	51E22137S01	μPC4570HA
IC601	51E26022S01	KIA494C
IC602	51E26022S01	KIA494C
Transistors		
Q501	48T61719F01	FET, 2SK389BL
Q502	48T61719F01	FET, 2SK389BL
Q503	48E09036S02	KTA1266
Q504	48E09036S02	KTA1266
Q505	48E09088S01	KTC3198
Q506	48E09088S01	KTC3198
Q507	48E09088S01	KTC3198
Q508	48E09088S01	KTC3198
Q509	48E09036S02	KTA1266
Q510	48E09036S02	KTA1266
Q511	48E09088S01	KTC3198
Q512	48E09088S01	KTC3198
Q513	48E23701S01	KTC3228
Q514	48E23701S01	KTC3228
Q515	48E23700S01	KTA1275
Q516	48E23700S01	KTA1275
Q517	48E08329S01	KSC2682
Q518	48E08329S01	KSC2682
Q519	48E10027S01	KSC2690A
Q520	48E10027S01	KSC2690A
Q521	48E05943S01	KSA1220A
Q522	48E05943S01	KSA1220A
Q523	48E09088S01	KTC3198
Q524	48E09088S01	KTC3198
Q525	48E09088S01	KTC3198
Q526	48E09088S01	KTC3198
Q527	48E25554S01	FET, IRF540
Q528	48E25554S01	FET, IRF540
Q529	48E25554S01	FET, IRF540
Q530	48E25554S01	FET, IRF540
Q531	48E25555S01	FET, IRF9540
Q532	48E25555S01	FET, IRF9540
Q533	48E25555S01	FET, IRF9540
Q534	48E25555S01	FET, IRF9540
Q601	48E09088S01	KTC3198
Q602	48E09088S01	KTC3198
Q603	48E09088S01	KTC3198
Q604	48E09088S01	KTC3198
Q605	48E25311S01	FET, IRFZ44
Q606	48E25311S01	FET, IRFZ44
Q607	48E25311S01	FET, IRFZ44
Q608	48E25311S01	FET, IRFZ44
Q609	48E25311S01	FET, IRFZ44
Q610	48E25311S01	FET, IRFZ44
Q611	48E25311S01	FET, IRFZ44
Q612	48E25311S01	FET, IRFZ44
Q613	48E10027S01	KSC2690A
Q614	48E10027S01	KSC2690A
Q615	48E05943S01	KSA1220A
Q616	48E05943S01	KSA1220A
Q617	48E10027S01	KSC2690A
Q618	48E10027S01	KSC2690A
Q619	48E05943S01	KSA1220A
Q620	48E05943S01	KSA1220A
Q701	48E09036S02	KTA1266
Q702	48E05943S01	KSA1220A
Q703	48E05943S01	KSA1220A
Q704	48E09088S01	KTC3198
Q705	48E09088S01	KTC3198
Q706	48E09036S02	KTA1266
Q801	48E23700S01	KTA1275
Q802	48E25515S01	DTC143ES
Q803	48E09035S02	KRC104M
Q804	48E09036S02	KTA1266
Q805	48E09088S01	KTC3198
Q806	48E09035S02	KRC104M
Q807	48E09036S02	KTA1266
Q808	48E10239S01	KRA104M
Q809	48E09035S02	KRC104M
Q810	48E09088S01	KTC3198
Q811	48E09088S01	KTC3198
Q812	48E09088S01	KTC3198
Q813	48E09036S02	KTA1266
Q814	48E09088S01	KTC3198
Q815	48E09036S02	KTA1266
Q816	48E08335S01	KTC2878
Q817	48E08335S01	KTC2878
Photo Couplers		
PT701	48E25501S01	PS2501-1
PT702	48E25501S01	PS2501-1
Diodes		
D501	48E22916S01	1SS133
D502	48E22916S01	1SS133
D601	48E25517S01	11EFS2
D602	48E25517S01	11EFS2
D603	48E25517S01	11EFS2
D604	48E25517S01	11EFS2
D605	48E25517S01	11EFS2
D606	48E25517S01	11EFS2
D607	48E25517S01	11EFS2
D608	48E25517S01	11EFS2
D609	48E22154S01	F10P20F
D610	48E22154S01	F10P20F
D611	48E22155S01	F10P20FR
D612	48E22155S01	F10P20FR
D701	48E22916S01	1SS133
D702	48E22916S01	1SS133
D704	48E22916S01	1SS133
D801	48E23703S01	1N4003
D802	48E23703S01	1N4003
D803	48E22916S01	1SS133
D804	48E22916S01	1SS133
D805	48E22916S01	1SS133
D806	48E23703S01	1N4003
D807	48E22916S01	1SS133
D808	48E22916S01	1SS133
ZD501	48T83128F26	Zener, HZS9C2L
ZD502	48T83128F26	Zener, HZS9C2L
ZD601	48E25567S01	Zener, MTZJ27B
ZD602	48E25567S01	Zener, MTZJ27B
ZD603	48E25567S01	Zener, MTZJ27B
ZD604	48E25567S01	Zener, MTZJ27B
ZD605	48E25567S01	Zener, MTZJ27B
ZD606	48E25567S01	Zener, MTZJ27B
ZD607	48E25567S01	Zener, MTZJ27B
ZD608	48E25567S01	Zener, MTZJ27B
ZD609	48E22436S01	Zener, MTZJ16B
ZD610	48E22436S01	Zener, MTZJ16B
ZD611	48E22436S01	Zener, MTZJ16B
ZD612	48E22436S01	Zener, MTZJ16B
ZD701	48E08332S01	Zener, MTZJ22B
ZD702	48E22162S01	Zener, MTZJ9.1B
ZD703	48E25568S01	Zener, MTZJ39B
ZD704	48E25568S01	Zener, MTZJ39B
ZD801	48E22917S01	Zener, MTZJ6.8A
LED's		
LD501	48E25556S01	KLR3303N (RED)
LD502	48E25556S01	KLR3303N (RED)
Coils		
L601	24E25516S01	Choke
L602	25E20892S01	Choke
L603	25E20892S01	Choke
L604	24E25516S01	Choke
L605	24E25516S01	Choke
L606	25E20892S01	Choke
L607	25E20892S01	Choke
L608	24E25516S01	Choke
Switches		
S101	40E23679S01	Slide, SSAF122NA (INPUT LEVEL)
S201	40E23679S01	Slide, SSAF122NA (PARAME EQ)
S301	40E20895S01	Slide, SSAF123NA (FILTER)
S302	40E20895S01	Slide, SSAF123NA (INPUT MODE)
S401	40T94668F06	Slide, SSSSF142 (PHASE)
S701	40E23679S01	Slide, SSAF122NA (LOW IMPEDANCE)

Symbol No.	Part No.	Description
Q805	48E09088S01	KTC3198
Q806	48E09035S02	KRC104M
Q807	48E09036S02	KTA1266
Q808	48E10239S01	KRA104M
Q809	48E09035S02	KRC104M
Q810	48E09088S01	KTC3198
Q811	48E09088S01	KTC3198
Q812	48E09088S01	KTC3198
Q813	48E09036S02	KTA1266
Q814	48E09088S01	KTC3198
Q815	48E09036S02	KTA1266
Q816	48E08335S01	KTC2878
Q817	48E08335S01	KTC2878
Photo Couplers		
PT701	48E25501S01	PS2501-1
PT702	48E25501S01	PS2501-1
Diodes		
D501	48E22916S01	1SS133
D502	48E22916S01	1SS133
D601	48E25517S01	11EFS2
D602	48E25517S01	11EFS2
D603	48E25517S01	11EFS2
D604	48E25517S01	11EFS2
D605	48E25517S01	11EFS2
D606	48E25517S01	11EFS2
D607	48E25517S01	11EFS2
D608	48E25517S01	11EFS2
D609	48E22154S01	F10P20F
D610	48E22154S01	F10P20F
D611	48E22155S01	F10P20FR
D612	48E22155S01	F10P20FR
D701	48E22916S01	1SS133
D702	48E22916S01	1SS133
D704	48E22916S01	1SS133
D801	48E23703S01	1N4003
D802	48E23703S01	1N4003
D803	48E22916S01	1SS133
D804	48E22916S01	1SS133
D805	48E22916S01	1SS133
D806	48E23703S01	1N4003
D807	48E22916S01	1SS133
D808	48E22916S01	1SS133
ZD501	48T83128F26	Zener, HZS9C2L

Symbol No.	Part No.	Description
ZD502	48T83128F26	Zener, HZS9C2L
ZD601	48E25567S01	Zener, MTZJ27B
ZD602	48E25567S01	Zener, MTZJ27B
ZD603	48E25567S01	Zener, MTZJ27B
ZD604	48E25567S01	Zener, MTZJ27B
ZD605	48E25567S01	Zener, MTZJ27B
ZD606	48E25567S01	Zener, MTZJ27B
ZD607	48E25567S01	Zener, MTZJ27B
ZD608	48E25567S01	Zener, MTZJ27B
ZD609	48E22436S01	Zener, MTZJ16B
ZD610	48E22436S01	Zener, MTZJ16B
ZD611	48E22436S01	Zener, MTZJ16B
ZD612	48E22436S01	Zener, MTZJ16B
ZD701	48E08332S01	Zener, MTZJ22B
ZD702	48E22162S01	Zener, MTZJ9.1B
ZD703	48E25568S01	Zener, MTZJ39B
ZD704	48E25568S01	Zener, MTZJ39B
ZD801	48E22917S01	Zener, MTZJ6.8A
LED's		
LD501	48E25556S01	KLR3303N (RED)
LD502	48E25556S01	KLR3303N (RED)
Coils		
L601	24E25516S01	Choke
L602	25E20892S01	Choke
L603	25E20892S01	Choke
L604	24E25516S01	Choke
L605	24E25516S01	Choke
L606	25E20892S01	Choke
L607	25E20892S01	Choke
L608	24E25516S01	Choke
Switches		
S101	40E23679S01	Slide, SSAF122NA (INPUT LEVEL)
S201	40E23679S01	Slide, SSAF122NA (PARAME EQ)
S301	40E20895S01	Slide, SSAF123NA (FILTER)
S302	40E20895S01	Slide, SSAF123NA (INPUT MODE)
S401	40T94668F06	Slide, SSSSF142 (PHASE)
S701	40E23679S01	Slide, SSAF122NA (LOW IMPEDANCE)

Symbol No.	Part No.	Description
Thermistors		
TH701	48E20887S01	20K ohm
TH702	48E20887S01	20K ohm
TH703	48E20887S01	20K ohm
TH704	48E20887S01	20K ohm
Transformers		
T601	25E25557S01	Assy., Power Trans.
T602	25E25558S01	Assy., Power Trans.
T801	25E20891S01	Choke Trans.
T802	25E20891S01	Choke Trans.
Capacitors		
C101	08E20917S01	CER., 100pF
E101	23E08383S08	ELY., 10µF / 16V
C102	08E20917S01	CER., 100pF
E102	23E08383S08	ELY., 10µF / 16V
C103	21E06806S02	CER., 33pF
E103	23E20208S01	ELY., 47µF / 16V
C104	21E06806S02	CER., 33pF
E104	23E20208S01	ELY., 47µF / 16V
C105	21E06806S02	CER., 33pF
C106	21E06806S02	CER., 33pF
C107	08E20072S01	CER., 10pF
C108	08E20072S01	CER., 10pF
C109	08E23598S01	CP., 100pF
C110	08E23598S01	CP., 100pF
C201	08E20917S01	CER., 100pF
E201	23E08383S08	ELY., 10µF / 16V
C202	08E20917S01	CER., 100pF
E202	23E08383S08	ELY., 10µF / 16V
C203	08E20917S01	CER., 100pF
E203	23E08383S08	ELY., 10µF / 16V
C204	08E20917S01	CER., 100pF
E204	23E08383S08	ELY., 10µF / 16V
C205	08E07631S11	MYL., 0.15µF
C206	08E07631S11	MYL., 0.15µF
C207	08E07631S11	MYL., 0.15µF
C208	08E07631S11	MYL., 0.15µF
C301	08E20917S01	CER., 100pF
E301	23E08383S16	ELY., 4.7µF / 50V
C302	08E20917S01	CER., 100pF
E302	23E08383S16	ELY., 4.7µF / 50V
C303	08E07631S11	MYL., 0.15µF
C304	08E07631S11	MYL., 0.15µF

Symbol No.	Part No.	Description
C305	08E07631S11	MYL., 0.15µF
C306	08E07631S11	MYL., 0.15µF
C401	08E20917S01	CER., 100pF
E401	23E08383S13	ELY., 22µF / 16V
C402	21E06806S02	CER., 33pF
E402	23E08383S13	ELY., 22µF / 16V
C403	08E20914S01	CER., 4.7pF
E403	23E08383S16	ELY., 4.7µF / 50V
E404	23E08383S16	ELY., 4.7µF / 50V
C501	08E20918S01	CER., 180pF
E501	23E08383S13	ELY., 22µF / 16V
C502	08E20918S01	CER., 180pF
E502	23E08383S13	ELY., 22µF / 16V
C503	21E06808S02	CER., 2200pF
E503	23E25562S01	ELY., 22µF / 63V
C504	21E06808S02	CER., 2200pF
E504	23E25562S01	ELY., 22µF / 63V
C505	08E20915S01	CER., 47pF
E505	23E25562S01	ELY., 22µF / 63V
C506	08E20915S01	CER., 47pF
E506	23E25562S01	ELY., 22µF / 63V
C507	08E20072S01	CER., 10pF
E507	23E20210S01	ELY., 220µF / 16V
C508	08E20072S01	CER., 10pF
E508	23E20210S01	ELY., 220µF / 16V
C509	08E20216S01	MYL., 0.01µF
E509	23E08383S12	ELY., 22µF / 50V
C510	08E20216S01	MYL., 0.01µF
E510	23E08383S12	ELY., 22µF / 50V
C511	08E25510S01	CP., 150pF
C512	08E25510S01	CP., 150pF
C513	08E25510S01	CP., 150pF
C514	08E25510S01	CP., 150pF
C515	08E25510S01	CP., 150pF
C516	08E25510S01	CP., 150pF
C517	08E25510S01	CP., 150pF
C518	08E25510S01	CP., 150pF
C519	08E07631S18	MYL., 0.047µF
C520	08E07631S18	MYL., 0.047µF
C521	08E20217S01	MYL., 0.015µF
C522	08E20217S01	MYL., 0.015µF
C601	08E20912S01	MYL., 6800pF
E601	23T75491W14	ELY., 3300µF / 16V
C602	08E20912S01	MYL., 6800pF
E602	23T75491W14	ELY., 3300µF / 16V
C603	08E20912S01	MYL., 6800pF
E603	23T75491W14	ELY., 3300µF / 16V
C604	08E20912S01	MYL., 6800pF
E604	23T75491W14	ELY., 3300µF / 16V

Symbol No.	Part No.	Description
C605	08E07631S18	MYL., 0.047μF
E605	23E22148S01	ELY., 470μF / 50V
C606	08E07631S18	MYL., 0.047μF
E606	23E22148S01	ELY., 470μF / 50V
C607	08E07631S18	MYL., 0.047μF
E607	23E22148S01	ELY., 470μF / 50V
C608	08E07631S18	MYL., 0.047μF
E608	23E22148S01	ELY., 470μF / 50V
C609	08E25566S01	CER., 1500pF
E609	23E25564S01	ELY., 100μF / 63V
C610	08E20913S01	MYL., 0.056μF
E610	23E25564S01	ELY., 100μF / 63V
C611	08E20913S01	MYL., 0.056μF
E611	23E25564S01	ELY., 100μF / 63V
C612	08E20913S01	MYL., 0.056μF
E612	23E25564S01	ELY., 100μF / 63V
C613	08E20913S01	MYL., 0.056μF
E613	23T95403W01	ELY., 5600μF / 50V
C614	08E20913S01	MYL., 0.056μF
E614	23T95403W01	ELY., 5600μF / 50V
C615	08E20913S01	MYL., 0.056μF
E615	23T95403W01	ELY., 5600μF / 50V
C616	08E20913S01	MYL., 0.056μF
E616	23T95403W01	ELY., 5600μF / 50V
C617	08E20913S01	MYL., 0.056μF
E617	23E25553S01	ELY., 470μF / 63V
E618	23E25553S01	ELY., 470μF / 63V
E619	23E25553S01	ELY., 470μF / 63V
E620	23E25553S01	ELY., 470μF / 63V
E621	23E25561S01	ELY., 10μF / 63V
E622	23E25561S01	ELY., 10μF / 63V
E623	23E25561S01	ELY., 10μF / 63V
E624	23E25561S01	ELY., 10μF / 63V
E625	23E25563S01	ELY., 220μF / 63V
E626	23E25563S01	ELY., 220μF / 63V
E627	23E25563S01	ELY., 220μF / 63V
E628	23E25563S01	ELY., 220μF / 63V
E629	23E22158S01	ELY., 10μF / 50V
E630	23E22158S01	ELY., 10μF / 50V
E631	23E22158S01	ELY., 10μF / 50V
E632	23E22158S01	ELY., 10μF / 50V
E633	23E20210S01	ELY., 220μF / 16V
E634	23E20210S01	ELY., 220μF / 16V
E635	23E20210S01	ELY., 220μF / 16V
E636	23E20210S01	ELY., 220μF / 16V
C701	08E20216S01	MYL., 0.01μF
E701	23E22905S01	ELY., 2.2μF / 50V
C702	08E22081S01	CP., 1000pF
E702	23E26023S01	ELY., 100μF / 16V

Symbol No.	Part No.	Description
C703	08E20216S01	MYL., 0.01μF
E703	23E08383S08	ELY., 10μF / 16V
C704	08E07631S08	MYL., 0.1μF
E704	23E08383S08	ELY., 10μF / 16V
C705	08E07631S08	MYL., 0.1μF
E705	23E08383S13	ELY., 22μF / 16V
C706	08E25318S01	TF, 1500pF
E706	23E20210S01	ELY., 220μF / 16V
E707	23E08383S13	ELY., 22μF / 16V
E708	23E08383S13	ELY., 22μF / 16V
E709	23E08383S13	ELY., 22μF / 16V
E710	23E08383S18	ELY., 0.1μF / 50V
C801	08E07631S11	MYL., 0.15μF
E801	23E20908S01	ELY., 3.3μF / 50V
C802	08E22081S01	CP., 1000pF
E802	23E08383S03	ELY., 220μF / 10V
C803	08E22510S01	CP., 180pF
E803	23E20210S01	ELY., 220μF / 16V
C804	08E22081S01	CP., 1000pF
E804	23E08383S08	ELY., 10μF / 16V
E805	23E08383S08	ELY., 10μF / 16V
E807	23E08383S13	ELY., 22μF / 16V
E808	23E22158S01	ELY., 10μF / 50V
C899	23E11142S01	ELY., (B.P) 100μF / 10V

Resistors		(All resistors are chip 1/10W±5% unless otherwise noted.)
R555	06E22048S01	1K ohm
R556	06E22048S01	1K ohm
R557	06E22048S01	1K ohm
R558	06E22030S01	1K ohm 1/8W
R567	06E22048S01	1K ohm
R568	06E22030S01	1K ohm 1/8W
R569	06E22894S01	1.3K ohm
R570	06E22894S01	1.3K ohm
R573	06E22136S01	Cement, 0.1 ohm 5W X2
R574	06E22136S01	Cement, 0.1 ohm 5W X2
R575	06E22136S01	Cement, 0.1 ohm 5W X2
R576	06E22136S01	Cement, 0.1 ohm 5W X2
R577	06E22058S01	12K ohm
R578	06E22058S01	12K ohm
R579	06E22034S01	10K ohm 1/8W
R580	06E20903S01	10K ohm
R581	06E20907S01	M.O., 10 ohm 1W
R582	06E20907S01	M.O., 10 ohm 1W
R586	06E20903S01	10K ohm
R587	06E20903S01	10K ohm
R605	06E25560S01	47 ohm 1/8W

Symbol No.	Part No.	Description
R606	06E25560S01	47 ohm 1/8W
R607	06E22030S01	1K ohm 1/8W
R608	06E22030S01	1K ohm 1/8W
R609	06E22030S01	1K ohm 1/8W
R610	06E22030S01	1K ohm 1/8W
R611	06E25560S01	47 ohm 1/8W
R612	06E25560S01	47 ohm 1/8W
R621	06E20907S01	M.O., 10 ohm 1W
R622	06E20907S01	M.O., 10 ohm 1W
R623	06E20907S01	M.O., 10 ohm 1W
R624	06E20907S01	M.O., 10 ohm 1W
R702	06E22053S01	3.3K ohm
R704	06E22065S01	100K ohm
R705	06E22030S01	1K ohm 1/8W
R706	06E20903S01	10K ohm
R707	06E22111S01	5.6K ohm
R708	06E20851S01	43K ohm
R709	06E22049S01	1.2K ohm
R710	06E22060S01	22K ohm
R711	06E22049S01	1.2K ohm
R712	06E22508S01	20K ohm
R713	06E20851S01	43K ohm
R714	06E22060S01	22K ohm
R715	06E24189S01	150 ohm
R716	06E24189S01	150 ohm
R717	06E20903S01	10K ohm
R718	06E20903S01	10K ohm
R719	06E23740S01	510K ohm 1/8W
R722	06E23857S01	510 ohm
R723	06E20903S01	10K ohm
R724	06E22145S01	M.O., 10K ohm 1/2W
R725	06E22112S01	11K ohm
R726	06E22924S01	2.4K ohm
R727	06E24358S01	62K ohm
R728	06E22065S01	100K ohm
R729	06E22057S01	8.2K ohm
R730	06E22059S01	18K ohm
R731	06E22040S01	10 ohm
R732	06E23857S01	510 ohm
R733	06E20903S01	10K ohm
R734	06E22145S01	M.O., 10K ohm 1/2W
R736	06E22968S01	2.4K ohm 1/8W
R737	06E22065S01	100K ohm
R738	06E23685S01	11K ohm 1/8W
R739	06E22040S01	10 ohm
R740	06E25508S01	62K ohm 1/8W
R741	06E22060S01	22K ohm
R801	06E22034S01	10K ohm 1/8W
R802	06E22506S01	3.6K ohm

Symbol No.	Part No.	Description
R803	06E22509S01	150K ohm
R804	06E24140S01	3.3K ohm 1/8W
R805	06E22052S01	2.7K ohm
R806	06E23689S01	7.5 ohm
R807	06E25565S01	M.O., 560 ohm 1/2W
R808	06E22048S01	1K ohm
R809	06E22055S01	4.7K ohm
R810	06E22055S01	4.7K ohm
R811	06E22060S01	22K ohm
R812	06E22048S01	1K ohm
R813	06E23686S01	12K ohm 1/8W
R814	06E22037S01	100K ohm 1/8W
R815	06E22033S01	4.7K ohm 1/8W
R816	06E22065S01	100K ohm
R817	06E23737S01	2K ohm 1/8W
R818	06E22065S01	100K ohm
R819	06E22545S01	2K ohm
R820	06E22068S01	1M ohm
R821	06E23824S01	680K ohm 1/8W
R822	06E22067S01	470K ohm
R823	06E22030S01	1K ohm 1/8W
R824	06E22067S01	470K ohm
R825	06E22048S01	1K ohm
R826	06E23737S01	2K ohm 1/8W
R827	06E22030S01	1K ohm 1/8W
R828	06E22030S01	1K ohm 1/8W
R829	06E22053S01	3.3K ohm
VR501	18E25512S01	Variable, 1.5K ohm
VR502	18E25512S01	Variable, 1.5K ohm
VR701	18E20754S01	Variable, 10K ohm
VR703	18E20754S01	Variable, 10K ohm

Volume (1) P.C.Board

Resistors

VR101	18E25496S01	Volume, 50K ohmX2 (GAIN)
VR301	18E25495S01	Volume, 20K ohmX4 (CROSSOVER)

Symbol No.	Part No.	Description
Volume (2) P.C.Board		
Resistors		
VR201	18E25497S01	Volume, 20K ohmX2 (LEVEL)
VR202	18E25495S01	Volume, 20K ohmX4 (FREQUENCY)
VR203	18E25498S01	Volume, 20K ohmX2 (Q-FACTOR)
LED P.C.Board		
LED		
LD801	48E25502S01	YLOG-503M (GRN/ORG)
Miscellaneous		
ET501	29T75161W02	SPEAKER OUTPUT TERMINAL (CH-1)
ET502	29T75161W02	SPEAKER OUTPUT TERMINAL (CH-2)
ET801	29T75161W01	POWER SUPPLY TERMINAL
F801	65E25559S01	Fuse, Auto 60A
JK101	09E25594S01	INPUT RCA JACK

Symbol No.	Part No.	Description

Cabinet Assembly Parts List

NOTE:No parts number on parts list are not supplied.

Symbol No.		Index	Part No.	Description
	5	5-D	34E25539S01	Scale, Plate
	9		03E09416S01	Screw, TPG-TPT (M3X10)
	10	3-F	03E09416S12	Screw, TPG-TPT (M2.6X5)
	11		03E09417S06	Screw, TPG-TPT (M3X11)
	12		03E09417S08	Screw, TPG-TPT (M3X5)
	13		03E20920S01	Screw, TPG-TPT (M3X5)
	14		03E20921S01	Screw, MCH-TPT (M3X5)
	15		03E25522S01	Screw, TPG-TPT (M3X12)
	16	5-E	03E25523S01	Screw, Hex. Socket (M2.6X10)
	17		03E20922S01	Screw, TPG-TPT (M3X11)
	18		03E20923S01	Screw, TPG-TPT (M3X9)
	19	3-C	15E11445S01	Cover, Switch
	20	5-E	15E25597S01	Cover, Plate
○	21	5-E	15E25590S01	Badge, (V12) Expert
△	21	5-E	15E25589S01	Badge, (V12) DC-Straight
□	21	5-E	15E25590S01	Badge, (V12) Expert
	23	4-F	61E25527S01	Lens, LED
	24		02E25528S01	Nut (M7)
	31	3-B	01E25595S01	Assy., Shield Wire (To CB101/CH101)
	33		75E25536S01	Cushion, Sponge
	35	4-F	43E25538S01	Holder, LED
	38	3-F	09T95463W01	Holder, Fuse
	40		64E23788S01	Plate, Jump-A
	41		64E25592S01	Plate, Jump (D)
	42	2-E	64E25593S01	Plate, Jump
	43		29E22427S01	Lug, GND
	44	3-B	01E22586S01	Assy., Shield Wire (To CB102/CH102)

Symbol No.	Index	Part No.	Description

NOTE : ○: For North American Model Only, △: For General Foreign Model Only,
□: For Japanese Model Only, Others : Common.

Exploded View (Cabinet)